CHAPTER-1

THEORETICAL FOUNDATION OF PROBLEM
Theoretical Foundation of Problem

1.1 Introduction

The most recent descriptor for the effort to create greater integration of children with disabilities into school programmes is the term inclusion (Smith, J David, 1998). The term is viewed as more positive description of efforts to include children with disabilities in genuine and comprehensive ways in the total life of schools. It focuses on goal of education for children with disabilities by genuine involvement of each child in the total environment of the school. “Inclusive education as the processes of increasing the participation of students and reducing their exclusion from the cultures, curricula, and communities of local schools. Inclusion gears towards restructuring of the cultures, policies and practices in schools so that they respond to the diversity of students in their communities. Inclusion is concerned with the learning and participation of all students, not only those with impairments or those who are categorised as having special educational needs” (Booth et al. 2000).

Chadha (1997) defines inclusive education as “providing to all children (irrespective of the kind and degree of disability) equitable opportunities, to receive effective educational services with needed supplementary aids and support services in age appropriate classes in their neighbourhood schools.” Whereas integration and mainstreaming place focuses on adapting the child with special needs in the regular classroom; inclusive education emphasises on preparation of the school to create an environment conducive to accommodate them.
The practice of inclusive education is an emerging trend of education to the children with disabilities and other marginalised children. However, as the present work is to study the teaching-learning process of children with mental retardation in inclusive setting, the discussion here is focussed mainly on children with impairment in general and specifically on children with mental retardation. But to understand the process in totality, it is necessary to understand the evolution of inclusive education.

1.2. Changing Scenario from Segregation to Inclusion:

A shift in special educational service from segregated institutions to the inclusion for the children with special needs has been observed in five decades. The changes have undergone through the process of deinstitutionalization, normalization, integration and inclusion.

**Deinstitutionalization:** It is a movement based on the principles of normalization. Persons with disabilities, mostly the retarded and emotionally disturbed have moved out of the institutions into alternative community living arrangements. Wolfensberger (1972), one of the most outspoken advocates of both deinstitutionalization and normalization; maintains that normalization refers not only to treatment but to services, situations, and attitudes that will bring about human care for persons with disabilities. The practice calls for small, community based group homes that would permit residents to participates and be closer to their families as opposed to long term total life care in institutions (Encyclopaedia of Special Education, Vol. 1, 1987).
Mainstreaming: It is the popular term used for the legal doctrine of Least Restrictive Environment. The term and its underlying concepts are the product of civil right movement of 1950s and 1960s, during which time court judged on illegal segregation on the basis of race. Segregation was said to deny some children the opportunity of an education equal terms with others. This principle was extended to include the handicapped. Mainstreaming focuses on education of handicapped children with non-handicapped children to the maximum extent possible (Encyclopaedia of Special Education, Vol. 2, 1987).

Normalization: The key principle behind the trend towards more integration of people with disabilities into the society is known as normalization. The philosophical belief that we should use “means which are as culturally normative as possible, in order to establish and/or maintain personal behaviours and characteristics which are as culturally normative as possible” (Wolfensbberger, 1972)

Integration: A process of interaction of children with disabilities with non-disabilities in the regular classroom for a time decided as per the condition for mainstreaming the children with disabilities is integration. The integration may be for a few periods or may be for the whole day depending upon the abilities and need of the children with disabilities. The integration may be 1) physical integration where the children with disabilities are present in the physical environment of the of non-disabilities. Such as playing in the playground when other non-disabilities are playing or eating in the cafeteria with other children with non-disabilities; 2) academic integration, where the
children with and without disabilities are taught together; 3) social integration, where the children with disabilities and non-disabilities interact with each other in all social situations (Hallahan et al. 2000)

**Inclusion**: Inclusive education is full-time membership of students with disabilities in their chronologically age-appropriate classrooms with the necessary supports and services to benefit from educational activities (Lipsky & Gartner, 1992; Ryndak, Jackson, & Billingsley, 2000).

The shift of educational services to the persons with disabilities as observed above from deinstitutionalization to inclusion is a long process of advocacy by the professionals, the parents, the persons with disabilities and also the policy makers. Inclusion of the persons with disabilities varies for different societies.

Since five decades in western countries and three decades in India, the trend has been shifted from segregation to integration and finally inclusion. Inclusive education for the children with specific abilities and disabilities has been considered as the ultimate procedure for providing education to the children with special needs. There were a lot of apprehension about the inclusive education by the teachers, the parents and the professionals regarding its usefulness for the children with low performers such as children with mental retardation, autism, emotional and behavioural disorders. Still debates are continuing. Several debates are conducted at public and private forums to make the process better.
The resource room model replaced the self-contained model as the predominant method of serving students with disabilities in 1970s and remained so until 1990s. The resource room model was a “pull out” model where students were placed in a special education classes for portion of their instruction and integrated into the general education classrooms for other activities. Unfortunately, the premise with the resource room model was that the students with disabilities belonged in the special education classroom and were included in general education classrooms occasionally. Serving students with this model soon gave way to a more inclusive educational model (Hallahan et al., 2000).

Since mid of 1980s, there has been a call by advocates for inclusion to dismantle the dual education system (general and special) in favours of unified system that attempts to meet the needs of all students. Rather than spending a great deal of time and effort identifying students with special problems and determining whether they are eligible for special education services, proponents of a single education system suggest that efforts be extended on providing appropriate services to all students. This model definitely fits into the current school scenario where diversity will continue to increase over the next foreseeable future (Smith, J. D., 1998).

Currently, the term “inclusion” and “responsible inclusion” are used to identify the movement to provide services to students with disabilities in general education settings (Smith & Dowdy, 1998). It is acknowledged that within the context of inclusion, some services to students may be necessary
outside the general education classroom. While acknowledging that some students with disabilities may need some services outside the general classroom, proponents suggest that all students with disabilities belong with their non-disabled peers. Lamar – Dukes & Dukes (2005) state that “the move towards including students with disabilities in general education is fundamentally about the delivery of services in environment where students with disabilities have sufficient and systematic opportunity to engage with students without disabilities”. Successful inclusive schools result in a unified educational system for all students (Burstein, Sears, Wilcoxen, Cabello, & Spagna, 2004). Inclusive education is both a philosophy and educational practice. Philosophically, inclusive education is based on the rights of all the children, regardless of the ability level, to have access to a quality educational programme. Causton-Theoharis (2008) describe inclusive schools as “places where students, regardless of ability, race, language, and income, are integral members of classrooms, feel a connection to their peers, have access to rigorous and meaningful general education curricula and receive collaborative support to succeed”.

Changing policies and practices in the society have brought changes services for the persons with disabilities. The highlights of efforts made at world level and in India to bring changes of services for persons with disabilities towards inclusion are described below.
Global Scenarios:

The children with disabilities were abandoned. An example is the boy found in Aveyron forest of France. His name was later known as ‘Victor’. The case study is famous as “Victor of Aveyron”. Victor was a boy who had apparently lived his entire childhood life in the forest with the animals. He was found wandering in the jungle by many people in 1798. He was rescued, but soon escaped. He was rescued and kept in the care of a local woman for about a week before he escaped one more time to the forest.

However, on January 1800, he came out of forest on his own; perhaps habituated to human kindness after his second experience. His age was unknown but assumed to be 12 years. Despite the fact that he could hear, Victor was taken to the National Institute of the Deaf for the purpose of study. There, Jean Marc Gaspard Itard, a physician dealt him with empathy. Itard believed that two things separated humans from animals: empathy and language. He wanted to be the first person to fully civilize a wild child and attempted to teach Victor to speak and make him independent in all of his personal work. He designed educational plan to interest him to social life, improve his awareness of external stimuli, to extend range of his ideas, to speak and communicate by using symbol system. This is further considered as first attempt of special education (Hallan, S.P, 1978).

This experiment changed the idea of people to make attempt to train the persons with disabilities. Several efforts are made to educate persons with different disabilities but systematic practices got impetus after a series of
declaration in the international forum. Some important declarations are described below.

**International Declaration on Disabilities:**

1. **International Year of Disabled Person (IYDP) in 1981.**

   In 1976, the UN General Assembly proclaimed 1981 as the International Year of Disabled Persons (IYDP). It called for a plan of action at the national, regional and international levels, with an emphasis on equalization of opportunities, rehabilitation and prevention of disabilities.

2. **UN Decade of Disabled Persons (1983 - 1992).** UN aimed at achieving full participation & equality and protection of rights of PWD which followed the IYDP.


   12 Policy areas (National Coordination, Legislation, Information, Public awareness, Accessibility and communication, Education, Training & Employment, and Prevention of the cause, Rehabilitation services, Assistive Devices, Self Help Group Organization, and Regional Cooperation) were decided to implement in the decade to give equal opportunity to the persons with disabilities.


   United Nations Economic and Social Commission for Asia and the Pacific, at its fifty-eighth session on 22 May 2002 in Japan, adopted resolution 58/4 on promoting an inclusive, barrier-free and rights-based


Final Review of the Implementation of the “Asian and Pacific Decade of Disabled Persons, 2003-2012” was convened by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in October- November of 2012 in republic of Korea. The review was on areas like improving access to the physical environment, education and livelihood opportunities, greater participation in decision-making, gender equality for women with disabilities, making disaster risk reduction disability-inclusive as well as accelerating adoption and implementation of the Convention on the Rights of Persons with Disabilities. Asia & Pacific Decade of Disabled Persons was further extended from 2013 to 2022 (UNESCO, 2013).

Salamanca Declaration:

An important declaration in ‘World Conference on Special Needs Education: Access and Quality’ in June 1994 in Salamanca, Spain by United Nations Educational, Scientific and Cultural Organization brought a paradigm shift in policies and practices of services for the persons with disabilities in many countries. The declaration focuses on principles, policy and practice in education and special education for persons with special needs. This declaration
Para 3 of Salamanca declaration describes that schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups. These conditions create a range of different challenges to school systems. In the context of this Framework, the term ‘special educational needs ’ refers to all those children and youth whose needs arise from disabilities or learning difficulties.

Para 7 of the declaration describes the fundamental principle of the inclusive school. It states that all children should learn together, wherever possible, regardless of any difficulties or differences they may have. Inclusive schools must recognize and respond to the diverse needs of their students, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula, organizational arrangements, teaching strategies, resource use and partnerships with their communities. There should be a continuum of support and services to match the continuum of special needs encountered in every school.

Para 8 of the declaration emphasizes that children with special educational needs should receive whatever extra support they may require to
ensure their effective education. Inclusive schooling is the most effective means for building solidarity between children with special needs and their peers.

Para 19 of the declaration advises to nations. The practice of ‘mainstreaming’ children with disabilities should be an integral part of national plans for achieving education for all. Even in those exceptional cases where children are placed in special schools, their education need not be entirely segregated. Part-time attendance at regular schools should be encouraged. Necessary provision should also be made for ensuring inclusion of youth and adults with special needs in secondary and higher education as well as in training programmes. Special attention should be given to ensuring equality of access and opportunity for girls and women with disabilities (UNESCO, 1994).

India is a signatory of this declaration and has implemented many actions planned in the declaration through formulation and implementation of polices and encouraging the practice of inclusive education for children with disabilities; which is further described in Indian Scenario from page15.

Many countries have started formulating policies and are implementing inclusive education for the persons with disabilities following international declaration. The state of art in education and rehabilitation of persons with disabilities varies from country to country. The advancements of special education practice in different political structures of the countries like Australia and China; one from a developed nation and the other from the SAARC countries are cited below.
Australia

The Disability Discrimination Act 1992 has the provision for protecting the persons with disability. The objects of this Act are:

(a) To eliminate, as far as possible, discrimination against persons on the ground of disability in the areas of:

(i) work, accommodation, education, access to premises, clubs and sport;
(ii) the provision of goods, facilities, services and land;
(iii) existing laws;
(iv) the administration of Commonwealth laws and programs;

(b) To ensure, as far as practicable, that persons with disabilities have the same rights to equality before the law as the rest of the community; and

(c) To promote recognition and acceptance within the community of the principle that persons with disabilities have the same fundamental rights as the rest of the community.

The Melbourne Declaration on Educational Goals for Young Australians declares that 'all Australian governments and all school sectors must provide all students with access to high-quality schooling that is free from discrimination based on gender, language, sexual orientation, pregnancy, culture, ethnicity, religion, health or disability, socioeconomic background or geographic location' One of the recommendations is for practicing inclusive education for the persons with disabilities (http://www.curriculum.edu.au/verve/resources)
‘Inclusive classroom practice’ may occur in the local school or an education support school, centre or unit. Inclusive classroom practice is not about placement. It is about making sure that children are taught in ways that suits their needs.

Inclusive classroom practice is not about where parents choose to enrol their children, but how schools educate all children, including those with diverse needs.

Inclusive classroom practice is about:

- Identifying educational needs
- Making adjustment to suit the school context
- Planning, teaching and reporting so that appropriate adjustments ensure success
- Working together. This includes parents/caregivers, teachers, learning support teams, school administration, district based personnel, visiting teachers and representatives from other agencies
- Being flexible. This means investigating creative ways to teach, organise, support and learn. Flexible resourcing is more than the appointment of additional teacher and or education assistant time. It is about identifying specific needs and then organising specific resources.

The seven principles of inclusive education in Australian public schools are:

- **Providing access and participation**
  
  All students have the right to enrol, access and participate in schooling which meets their educational needs.
• **Valuing Diversity**  
  All levels of the system value diversity and operate within an inclusive framework.

• **Ensuring local decisions and adjustments**  
  A range of effective adjustments is provided to ensure access, participation and achievement.

• **Implementing a new framework for resource allocation**  
  Adjustments are provided on the basis of needs and are equitably resourced.

• **Matching pedagogy with student needs**  
  The system supports the development of pedagogy to meet individual student needs.

• **Delivering responsive programs and services**  
  The range of coordinated programs and services provided are flexible and delivered according to student needs.

• **Collaborating for better outcomes**  
  Services are provided and supported by collaborative models and partnerships. (Australian Research Alliance for children and Youth, November 2012).

**China**

The people's republic of china passed a law in 1990 for the protection of disabled persons. In this law, the articles from 18 to 23 describe about the education and provision of special education for the children with disabilities.
Article 18 describes about the responsibility of the authority for education of the disabled persons. The state shall guarantee the right of disabled persons to education. People’s governments at various levels should make education of disabled persons a component of the state educational programme, include it in their overall planning and strengthen leadership in this respect. The state, society, schools and families shall provide compulsory education for disabled children and juveniles.

The state shall exempt disabled students who accept compulsory education from tuition and reduce sundry fees or exempt them from such fees according to actual situations. The state shall set up grant-in-aid to assist students who are poor and disabled.

The education of disabled persons shall be carried out according to their physical and psychological features and needs and shall meet the following requirements:

- Strengthen physical and psychological compensation and vocational and technical training while providing ideological and cultural education;
- Adoption of ordinary or special methods of education according to different categories of disability and varied abilities of response of the disabled persons; and
- Development of the curricula, teaching materials and methods of special education are based upon age and appropriate eligibility of the students with disabilities.

The principle of combining popularization with upgrading of quality shall be implemented in education of disabled persons, with emphasis on the
former. Priority shall be given to compulsory education and vocational and technical education while efforts shall be made to carry out preschool education and gradually develop education at and above the senior middle school level.

The state shall set up educational institutions for disabled persons and encourage social forces to run schools and donate funds for schools. General educational institutions shall provide education for disabled persons who are able to receive ordinary education.

Regular primary schools and junior middle schools must admit disabled children or juveniles who are able to adapt themselves to life and study there; ordinary senior middle schools, secondary polytechnic schools, technical schools and institutions of higher learning must admit disabled students who meet the state admission requirements and shall not deny their admission because of their disabilities; in case of such denial, the disabled students, their family members or guardians may appeal to the relevant authorities for disposition. The relevant authorities shall instruct the schools concerned to enrol the students.

Regular institutions of preschool education shall admit disabled children who are able to adapt themselves to the life there. Preschool education institutions for disabled children, classes for disabled children attached to ordinary preschool education institutions, preschool classes of special education schools, welfare institutions for disabled children and families of disabled children shall be responsible for preschool education of disabled children.

Special schools at or below junior middle school level and special classes attached to general schools shall be responsible for the implementation of
compulsory education for disabled children and juveniles who are not able to respond to ordinary education.

Special schools and special classes attached to general schools at or above senior middle school level, as well as institutions of vocational and technical education for disabled persons, shall be responsible for providing cultural education at or above senior middle school level and vocational and technical education for eligible disabled persons (http://www.dredf.org/international/lawindex.shtml, December 2013).

It can be said that education for children with disabilities is comparable in both the countries though the Government Structures and Principles are different. India being a developing country has advanced in the education and rehabilitation of the persons with disabilities due to government and civil society partnership. The principles and practice of inclusive education is emerged in 1960’s and various policies have been formulated being a signatory of international declarations. The development of education services in the field of disabilities in India is described here.

**Scenario in India:-**

The special educational service and other rehabilitation services are provided to the persons with disabilities identified in a society. Identification and selection of the children with special needs depends upon various socio-political factors like the policy of the government, economic consideration, understanding of a society, research and development in the field of rehabilitation and its available resources. Legally speaking, the number of
recognized categories of disabilities was restricted to seven categories in India: blindness, low vision, leprosy cured, hearing impairment, locomotors disability, mental retardation and mental illness (Persons with Disabilities, Equal Opportunities, Protection of Rights and Full Participation Act 1995- known as ‘PWD Act 95’).

Education of the children with disabilities in India is given priority three decades before the ‘PWD Act 95’. The recommendation of the National Education Commission is the base for formulation of policies and act for education and rehabilitation services for the persons with disabilities in India. Though, the family and community structure of Indian society has a base for inclusion of persons with disabilities but polices and implementation of different acts of the country have given further boosts to the education of the children with disabilities.

Like all other countries some people in Indian Society used to treat the children with disabilities as the curse of the God (Jeyachandran, P, 2002).

But generally, in many parts of country, the children with various disabilities were well integrated with the joint family system. Especially, as Indian economy is an agricultural one, everyone here has an opportunity to work in the agricultural field in contrary to an industrial society. They were supported by many individuals or by charity organizations for independent living. There were efforts for training the persons with disabilities at various levels but the formal training started after establishment of special schools.
The first school for children with hearing impairment started in 1884 at Mazagaon in the then Bombay Presidency under the supervision of Rev. Fr. Golfsmith with the support of Roman Catholic Archbishop of Bombay. After 9 years, the Calcutta Deaf and Dumb schools was established in 1893 in the eastern part of India. The third institutions for the deaf came into existence in 1896 in Palayamkottah in the southern part of India.

In 1935, the Convention of Teachers of the Deaf in India (CTDI) had come up to create awareness and to focus the needs and problems of persons with hearing impairment.

The first Teacher Training Centre for the teachers of the deaf was established in Calcutta (now known as Kolkata) in 1897. All India Institute of Speech and Hearing (AIISH) a national level institute was established in Mysore in 1965 to cater the services for the hearing impaired persons. In the year 1983, Ali Yavar Jung National Institute for the Hearing Handicapped was established creating a landmark for the persons with hearing impairment. (Disability Status in India-2003, Rehabilitation Council of India).

A vocational training centre for the adult blind was established in Dehradun in 1957. The first special school for children with visual impairment was established in January 1959 at Rajpur, Dehradun by the Central Government (now located in the campus of National Institute for the Visually Handicapped, Dehradun). National Association for the Blind was established in 1952 marking the beginning of concerted voluntary action in the field.
National Library for the Blind was established by the Central Government in 1962.

The persons with mental retardation were treated as mental ill and were either abandoned or were cared at home. The first service for persons with mental retardation started in Madras Lunatic Asylum in 1841; where mentally ill persons along with persons with mental retardation were treated separately. The first residential home was established for them in 1941 in Mankhurd by the Children Aid Society. The first special school was started in 1944 in Bombay (now Mumbai). Subsequently 11 special schools were established in India prior to Independent India ((Disability Status in India-2003, Rehabilitation Council of India).

In 1953, teacher training programme was started in Mumbai in Joy Wakil Institute. In 1971, a training for the teachers for teaching children with mental retardation started in Bal Vihar Training School in Madras (now Chennai). In 1984, National Institute for the Mentally Handicapped was established to carry out research in the field of mental retardation and development of man power (Disability Status in India-2003, Rehabilitation Council of India).

After establishment of the special schools, special education for the children with disabilities was given in the self-contained classroom. Education and training was focused on mobility and self-help skill training. The special education was purely philanthropic. Interested persons were learning by observing the experienced worker to work with the children with disabilities.
The education and rehabilitation services for the persons with disabilities were made formal and systematic after formulation of policies and Government initiatives.

1.3. Policies and Government Initiatives:

Constitutional Provisions:

Article 45 of the Constitution states that the state shall endeavour to provide, within a period of ten years from the commencement of this constitution, for free and compulsory education for all children until they complete the age of fourteen years. The significance of Article 45 was reaffirmed in 1993 with the supreme court’s Unnikrishnan judgment, also known as the case “Unnikrishnan vs. the state of Andhra Pradesh. In this case, the court ruled that Article 45 must be read in conjunction with Article 21 of the constitution, which states that “No person shall be deprived of his life or personal liberty except according to procedure established by law.” By requiring these two articles to be read in conjunction, elementary education is now considered imperative for life and personal liberty in India. As the goal was not met for many years after independence, there was a need for amendment of the Constitution to make the education compulsory.

The Indian Constitution through its 86th Amendment Act 2002 (Article 21 A); ensures free and compulsory education for all children in the age group of 6 – 14 years (The Gazette of India, Aug. 27, 2009) as a fundamental right in a such a manner as the state may by law determine, effect on 1st April 2010.
National Education Commission (Kothari Commission) 1964-66:

National Education Commission headed by Prof. D. S. Kothari recommended that the education of the handicapped children has to be organized not merely on humanitarian grounds of utility. Proper education generally enables a handicapped child to overcome largely his or her handicap and make him into a useful citizen. Social justice also demands. Kothari Commission also mentioned on experimentation with integrated programmes for handicapped children.

The version of the Kothari Commission is “We now turn to the education of handicapped children. Their education has to be organized not merely on humanitarian grounds of utility. Proper education generally enables a handicapped child to overcome largely his or her handicap and make him into a useful citizen. Social justice also demands it...on an overall view of the problem, however, we feel that experimentation with integrated programmes is urgently required and every attempt should be made to bring in as many children in integrated programs”.

National Education Policy 1968:

In 1968, the National Education Policy adopted the commission’s recommendations and had suggested the expansion of educational facilities for physically and mentally handicapped children, and the development of an ‘integrated programme’ enabling handicapped children to study in regular schools.

National Education Policy 1986:

The NPE (1986), recognized the need of giving special attention to the education of handicapped. The objectives should be to integrate the physically and mentally handicapped with the general community as equal partners, to
propose them for normal growth and enable them to face life with courage and confidence (Para 4.9). The policy recommends certain measures in this regard.

1. Whenever feasible, the education of children with locomotor handicaps and the mild handicaps will be with that of others.

2. Special schools with hostel facilities will be provided as far as possible at district headquarters for severely handicapped children.

3. Adequate arrangements will be made for vocational training to the disabled.

4. Teachers training programme should be reoriented in particular for teachers of primary classes, to deal with special difficulties of handicapped children.

5. Voluntary efforts for the education of the disabled will be encouraged in every possible way.

Programme of Action 1992:

Programme of Action emphasizes the recommendations of National Policy on Education-1986 and narrated its target as delineated under:

For achieving equalization of educational opportunities, the children with disabilities should have access to quality education comparable to other children. However, considering the financial resources likely to be available the target for education of disabled children would be as follows:
i) Universal enrolment for the children who can be educated in general primary schools. Achievement of minimum level of learning through adjustment and adaptation of curriculum would be ensured.

ii) Reduction of dropout rates at par with other children

iii) Providing access to disabled children to secondary and senior secondary schools with resource support and making special provisions of vocational training for these children, particular those with intellectual disabilities.

iv) Reorienting pre-service and in-service teacher education programmes including pre-school teacher training programme to meet special needs in the classroom.

v) Reorienting adult and non-formal education programmes to meet the educational and vocational training needs of persons with disability.


Following the recommendations of the National Policy on Education (1968), the Government of India with the help of the State Government started establishing the National Institutes for various disabilities in 1970s. These organisations are established to develop manpower in the field of disabilities, to carry out research to provide scientific services to persons with disabilities, and to demonstrate model services to the state governments and volunteer organizations. The Rehabilitation Council of India was also established to formalise the courses in the field of rehabilitation. Table 1.1 gives the details of
the development of premier institution to promote the services for various disabilities.

Table 1.1. Showing the National Institutes Working for Persons with Disabilities in India:

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<tr>
<th>Sl. No.</th>
<th>National Institutes</th>
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<tbody>
<tr>
<td>1</td>
<td>Institute for the Physically Handicapped, New Delhi.</td>
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<td></td>
<td>It was established in 1976 with the following objectives:</td>
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<td></td>
<td>• Conducting Physiotherapy /Occupational Therapy courses of 3 1/2 years duration each.</td>
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<td></td>
<td>• Conducting Diploma in Prosthetic and Orthotic Engineering of 2 1/2 years duration.</td>
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<td></td>
<td>• Running workshop for fabrication or Orthotic and Prosthetic Appliances.</td>
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<tr>
<td></td>
<td>• Operating Physiotherapy, Occupational Therapy and Speech Therapy OPD services.</td>
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<tr>
<td></td>
<td>• Running a Special Education School up to primary level for the Orthopedically Handicapped children and a social and vocational guidance unit.</td>
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<tr>
<td>2</td>
<td>National Institute for the Visually Handicapped, Dehradun, Uttarakhand.</td>
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<tr>
<td></td>
<td>It was established in 1979 with the following objectives:</td>
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<tr>
<td></td>
<td>• To conduct, sponsor, coordinate &amp; carry out research for the education and rehabilitation of the visually handicapped.</td>
</tr>
<tr>
<td></td>
<td>• To undertake, sponsor, coordinate and carry out research for</td>
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biomedical engineering - resulting in the effective evaluation of aids, also surgical or medical procedure or the development of the new aids.

- To undertake or sponsor programs for trainees and teachers, employment officers, psychologists, vocational counsellors and such other personnel as may be deemed necessary by the Institute for promoting education, training and rehabilitation of the visually handicapped.

- To distribute or promote or subsidise - the manufacture or prototypes and distribution of any, or all aids, designed to promote the education, rehabilitation or therapy of the visually handicapped.

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**National Institute for the Orthopaedically Handicapped (NIOH), Kolkata, West Bengal.**

It was established in 1982 with the following objectives:

- To develop manpower for providing services to the orthopaedically handicapped population, namely, training of Physiotherapist, Occupational therapist, Orthopaedic and Prosthetic Technicians, Employment and Placement Officers, vocational counsellors etc.

- To develop model services for the orthopaedically handicapped population in the areas of restorative surgery, aids and appliances, vocational training etc.
Ali Yavar Jung National Institute for the Hearing Handicapped (AYJNIHH), Mumbai, Maharashtra.

It was established in 1983 with the following objectives:

- To conduct, sponsor, coordinate & subsidize research for the education and rehabilitation of the hearing handicapped.
- To undertake, sponsor, coordinate or subsidize research for biomedical engineering - resulting in the effective evaluation of aids, also surgical or medical procedure or the development of the new aids.
- To undertake or sponsor programs for trainees and teachers,
employment officers, psychologists, vocational counsellors and such other personnel as may be deemed necessary by the Institute for promoting education, training and rehabilitation of the hearing handicapped.

- To distribute or promote of subsidize the manufacture of prototypes the manufacture or prototypes and distribution of any, or all aids, designed to promote the education, rehabilitation or therapy of the hearing handicapped.

National Institute of Rehabilitation Training & Research, Olatpur, Cuttack, Odisha.

It was established in 1984 with the objectives as given below:

- To promote the use of products of ALIMCO.

- Human Resource Development - To undertake, sponsor or coordinate training of personnel such as Doctors, Engineers, Prosthetists, Orthotists, Prosthetic and Orthotic Technicians, Physiotherapists, Occupational Therapists, Multi-Purpose Rehabilitation Therapists and such other personnel for the rehabilitation of the physically handicapped.

- Research - To conduct, sponsor, coordinate or subsidise research on biomechanical engineering leading to the effective evaluation of the mobility aids for the orthopaedically disabled persons or suitable surgical or medical procedures or development of new aids.
| • Aids and Appliance - To promote manufacture of prototype designed aids and to promote any aspects of the education and rehabilitation therapy of physically handicapped.  
| • Service Delivery Programmes - To develop models of service delivery programmes for rehabilitation.  
| • Vocational Training - To undertake vocational training, placement and rehabilitation of the physically handicapped.  
| • Information - To promote and disseminate information on rehabilitation in India and abroad.  
| • To undertake any other action in the area of rehabilitation of the physically handicapped.  
| • All the income will be utilised for the fulfilment of above aims and objectives.  

National Institute for the Mentally Handicapped (NIMH), Secunderabad, Andhra Pradesh.

It was established in 1984 with the objectives as given below:

- To develop appropriate models of care and rehabilitation for the persons with mental retardation appropriate to Indian conditions.
- To develop manpower for delivery of services to the persons with mental retardation.
- To identify, conduct and co-ordinate research in the area of mental retardation.
To provide consultancy services to voluntary organisations in the area of mental handicap and to assist them wherever necessary.

To serve as a documentation and information centre in the area of mental retardation.

To acquire relevant data to assess the magnitude causes, rural urban composition, socio-economic factors, etc. of mental retardation in the country.

To promote and stimulate growth of various kinds of quality services in the country for persons with mental retardation throughout the country.

National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD), Mutukadu, Chennai, Tamilnadu.

It was established in 2005 with the objectives:

To undertake human resource development in various functional areas covering inter-disciplinary, multi-disciplinary and trans-disciplinary activities for empowerment of persons with Multiple Disabilities through the state of the art rehabilitation intervention viz., educational, therapeutic, vocational, employment, leisure and social activities, sports, cultural programs and full participation as also through developing various approaches including community rehabilitation, project management and capacity building of
Non-Government Organizations (NGOs).

- To promote and conduct research in all areas relating to Multiple Disabilities and to develop trans-disciplinary models and strategies for social rehabilitation to meet the needs of diverse groups of people with Multiple Disabilities, by the society hereinafter referred to as “the Institute” or through NGOs.

- To conduct, sponsor, coordinate or subsidize research into all aspects of the education, rehabilitation, capacity building, and independent living of persons with Multiple Disabilities by the Institute or through NGOs.

- To undertake and/or sponsor the training of trainers and professionals in the areas of early intervention, early childhood education, special education, vocational training & employment, independent living, community rehabilitation and project management, therapists and such other personnel as may be deemed necessary by the Institute in empowering the persons with multiple disabilities.

- To manufacture, fabricate, adapt or promote or subsidize the manufacture of prototypes and distribution of any or all aids designed to promote any aspects of the education, therapy and rehabilitation of the persons with Multiple Disabilities.

(Source: socialjustice.nic.in, December 2014)
To implement the Government Policies on education for the persons with disabilities, the following programmes are undertaken:

**A. Project for Integrated Education Development**

Project for Integrated Education Development (PIED) was launched with assistance from UNICEF in 1986. The implementation of PIED in 10 demonstration sites in rural and urban contexts encouraged policy-makers to include children with moderate disabilities in 1992. In practice, children with multiple and severe disabilities were also integrated in project areas as a consequence of the lack of special schools, and through the commitment to providing education for all that was generated in these areas. Evaluation of PIED showed higher retention rates of children with disabilities, and a positive change in teacher practices. The success of this project resulted in the centrally sponsored scheme launched by the Ministry for Human Resource Development called Integrated Education for Disabled Children (IEDC) in 1992. The objective of the scheme is to provide educational opportunities for children with disabilities in ordinary schools, so as to facilitate their retention in the school system. This scheme offers financial assistance towards the salary of special educators, provision of aids and appliances for children with special needs, training of special educators, removal of difficulties due to building design, provision of instructional materials, community mobilization, and early detection and resource support.
B. The District Primary Education Project:

The government launched the District Primary Education Project (DPEP) with support from the World Bank. DPEP is converging with IEDC and other government and NGO programmes to bring synergy in the process of including more children with disabilities into the regular school system. It focuses on in-service training of general teachers to enable early detection, assessment, use of aids, and making of individual educational plans. Although DPEP was initiated in 1994, integrated education for children with disabilities was formally added as a programme component in 1997. The programme covers 60 per cent of the child population of the country, and spreads over 176 districts in 15 states.

C. The District Rehabilitation Centre and National Programme for Rehabilitation of Persons with Disabilities.

The Ministry of Social Justice and Empowerment has set up 11 District Rehabilitation Centres in 10 states—Orissa, Andhra Pradesh, Rajasthan, Maharashtra, Uttar Pradesh, Tamil Nadu, Haryana, West Bengal, Madhya Pradesh and Karnataka. A similar scheme called the National Programme for Rehabilitation for Persons with Disability (NPRPD) was launched in 1999. Under the scheme, financial resources are provided to state governments for initiating services at the district level. The government is using community-based rehabilitation as a strategy to scale up basic rehabilitation services, and to create a process for empowering people with disabilities, their families and communities. Within the scheme, the system of delivery of rehabilitation services is established from grassroots to the state level as follows
• Each gram panchayat will have two community-based rehabilitation workers—for promoting community-based rehabilitation of people with disabilities, especially prevention, early detection and intervention.

• Each block will have two multipurpose rehabilitation workers—for providing basic rehabilitation services, and for coordinating activities with other government agencies.

• There is a District Referral and Training Centre—for providing comprehensive rehabilitation services to people with disabilities covering all categories.

• There is a State Resource Centre—to serve as the state-level apex institution for training and human resources development, and providing rehabilitation services including those referred to it from lower levels.

D. UN support to Primary Education and Community School Programme.

The Community School Programme is a unique multi-state, multi-agency initiative. UN organizations—UNDP, UNICEF, UNFPA, UNESCO and ILO—are participating in the programme with five nodal ministries and nine state departments. The programme is a vehicle for channelling UN support for ongoing efforts towards Universalization of Elementary Education (UEE) by helping to enhance and sustain community participation in effective school management and the protection of child rights. Support is being provided for improving the performance of teachers in the use of interactive, child-centred and gender-sensitive methods of teaching in multi-grade classrooms, and to redressing social constraints that affect attendance and performance of school-
aged children, mainly girls. The focus is on addressing the educational needs of working children, children with disabilities, and adolescent girls.

E. SarvaShikshaAbhiyan

At present, the massive SarvaShikshaAbhiyan (SSA- Education for All) programme aims to achieve Universalized Elementary Education for all. Efforts within SSA will be underscored by effective decentralization, sustainable financing, cost effective strategies for universalization, community-owned planning and implementation, and focus on girls, marginalized caste groups and ethnic minorities. Inclusive education is an integral component of SSA, and success will largely depend on the extent of enrolment, retention and achievement rates of children with specials needs.

The SSA framework provides Rs 1200 per challenged child per year to meet certain expenses. Interventions suggested for integrated education of disabled children are early detection and identification, functional and formal assessment, educational placement, aids and appliances, support services, teacher training, resource support, parental training and community mobilization, planning and management, strengthening of special schools, removal of architectural barriers, research, monitoring and evaluation, and a special focus on girls with disabilities. The provision of Rs 1200 per challenged child per year made under SSA may not suffice, if all the interventions are to be supported. Therefore, the Union Secretary (Elementary Education and Literacy) convened a meeting of those departments/agencies of the government, who have stake in integrated education of disabled children, for seeking support and
exploring the possibility of convergence of their efforts with SSA to achieve a common objective. (Web. <http://ssa.nic.in/>. 16 March, 2012).

A schematic diagram is given below to show the implementation of policies for education and rehabilitation of persons with disabilities at various stages of Government in India

**Administrative Structure for Implementation of Education and rehabilitation Services for Persons with disabilities in India**

**Central Level:**
- Education of children with disabilities is taken cared by the Ministry of Human Resource Development (MHRD). Inclusive education is funded and monitored by MHRD.
- Rehabilitation and education of persons with disabilities are being taken cared by the Ministry of Social Justice and Empowerment.

**State Level:**
- The inclusive education is being implemented by the Department of School and Mass Education under SarvaShikshyaAbhiyan.
- Different states have different department such and Women and Child Development, Social Defence or Social Justice and Empowerment to look after the rehabilitation of the person with disabilities.

**District Level:**
- Office of District Magistrate controls both the education and rehabilitation of person with disabilities with its units such as District Project Office, SSA and Social Welfare Office.

The distribution of administrative responsibilities shows a clear apathy on the part of the Government to see special education at par with general
education as special education is entirely looked upon by the Ministry of Social Justice and Empowerment instead of Ministry of Human Resource Development. However, inclusive education is the responsibility of Department of Education.

1.4. Inclusive Education:

Inclusive education involves regular schools and classrooms genuinely adapting and changing to meet the needs of all children, as well as celebrating and valuing differences. This definition of inclusion does not imply that the children with diverse abilities will not receive specialized assistance or teaching outside of classroom when required, rather than this is one of many options that are available to, and in fact required for all children (Loreman and Deppeler 2001)

The inclusive education may be the result of evolution of educational principles and strategies to accommodate diverse learners in the classroom. This is described in the table 1.2 below.

Table 1.2 Comparison of General Education and Inclusive Education

<table>
<thead>
<tr>
<th>General Education Model</th>
<th>Inclusive Educational Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some students do not fit in the general classes</td>
<td>All students fit in general education</td>
</tr>
<tr>
<td>The teacher is the instructional leader</td>
<td>Collaborative teams share leadership responsibility</td>
</tr>
<tr>
<td>Students learn from teachers and teachers solve the problems</td>
<td>Students and teachers learn from each other and solve problems together</td>
</tr>
<tr>
<td>Students are purposely grouped by</td>
<td>Students are purposely grouped by</td>
</tr>
<tr>
<td>General Education Model</td>
<td>Inclusive Educational Model</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>similar ability</td>
<td>differing abilities</td>
</tr>
<tr>
<td>Instruction is geared toward middle-achieving students</td>
<td>Instruction is geared to match students at all levels of achievement</td>
</tr>
<tr>
<td>Grade – level placement is considered synonymous with curricular content</td>
<td>Grade-level placement and individual curricular content are independent of each other</td>
</tr>
<tr>
<td>Instruction is often passive, competitive, didactic, and/or teacher directed</td>
<td>Instruction is active, creative, and collaborative among members of the classroom</td>
</tr>
<tr>
<td>Most instructional supports are provided outside the classroom</td>
<td>Most instructional supports are provided within the classroom</td>
</tr>
<tr>
<td>Students who do not fit in are excluded from general classes and/or activities.</td>
<td>Activities are designed to include students though participation level may vary</td>
</tr>
<tr>
<td>The teachers assume ownership for the education of general education students, and special education staff assume ownership for the students with special needs</td>
<td>The classroom teacher, special educators, related service staff, and families assume shared ownership for educating all students</td>
</tr>
<tr>
<td>Students are evaluated by common standards</td>
<td>Students are evaluated by individually appropriate standards</td>
</tr>
<tr>
<td>Students’ success is achieved by meeting common standard</td>
<td>The system of education is considered successful when it strives to meet each student’s needs. Students’ success is achieved when both individual and group goals are met.</td>
</tr>
</tbody>
</table>

Inclusive education can also be characterized by taking its inherent features. For example, ‘The Guidelines for Inclusion’ (UNESCO, 2005), extended the idea that the concept of inclusion could be labelled using the following four key elements

The essence of the diagram implies that inclusion as a process is a “never-ending search” which allows investigating ways of responding to diversity. It is concerned with the identification and removal of barriers based on collecting and evaluating information in order to plan for improvements in policy and practice. There is also a need to understand that inclusion requires
not only physical presence but also active participation and achievement of all children; and gives special emphasis on children who are “at risk of marginalization, exclusion or underachievement” (UNESCO, 2005:15).

There are many different factors critical to the success of inclusion. Webber (1997) identified five essential features that characterize successful inclusion of students with special needs: (1) a sense of community and social acceptance, (2) an appreciation of student diversity, (3) attention to curricular needs, (4) effective management and instruction, and (5) personal support and collaboration. Voltz, Brazil, and Ford (2001) list three critical elements: (1) active, meaningful, participation in the inclusive setting, (2) sense of belonging, and (3) shared ownership among faculty.

1.5. Inclusion of Children with Mental Retardation:

Inclusion of children with mental retardation is most challenging due to their nature. Lack of reasoning ability, lack of short term memory and poor attention span of these children result in failure in academic learning in the classroom. A brief discussion about the nature will suffices the cruciality of the education procedure for them in the regular school.

The American Association on Intellectual and Developmental Disabilities (AAIDD) has for decades developed and revised successive definition of mental retardation, and now Intellectual Disabilities. This organization’s efforts are broadly recognized, and its definitions have often been incorporated, with modifications, into state and federal statutes. Although use of their definitions in educational regulations and practices has been uneven
(Denning, Chamberlain, & Polloway, 2010; Frankenberger & Harper, 1988; Polloway et al., 2009; Polloway, Lubin, Smith & Patton, 2010), the AAIDD’s definitions are generally considered as the basis for diagnosis in the field. Three concepts are central to the AAIDD’s definitions: intellectual functioning, adaptive behaviour or skills, and the developmental period (Grossman, 1983; Luckasson et al., 1992; Luckasson et al., 2002; Schalock et al., 2010).

Intellectual disability is characterized by significant limitations both in intellectual functioning and adaptive behaviour as expressed in conceptual, social, and practical adaptive skills. This disability originates before age 18 (AAIDD, 2010).

The following five assumptions are essential to the application of the above mentioned definition (Schalock et al., 2010).

1. Limitation in present functioning must be considered within the context of community environment typical of the individual’s age peers and culture.
2. Valid assessment considers cultural and linguistic diversity as well as differences in communication, sensory, motor, and behavioural factors.
3. Within an individual, limitations often co-exist with strengths.
4. An important purpose of describing limitations is to develop a profile of needed supports.
5. With appropriate personalized supports over a sustained period, the life functioning of the persons generally will improve.
Intellectual disability involves impairments of general mental abilities that impact adaptive functioning in three domains, or areas. These domains determine how well an individual copes with everyday tasks:

- The conceptual domain includes skills in language, reading, writing, math, reasoning, knowledge, and memory.

- The social domain refers to empathy, social judgment, interpersonal communication skills, the ability to make and retain friendships, and similar capacities.

- The practical domain centres on self-management in areas such as personal care, job responsibilities, money management, recreation, and organizing school and work tasks.

While intellectual disability does not have a specific age requirement, an individual’s symptoms must begin during the developmental period and are diagnosed based on the severity of deficits in adaptive functioning. The disorder is considered chronic and often co-occurs with other mental conditions like depression, attention-deficit/hyperactivity disorder, and autism spectrum disorder (DSM-5, http://www.dsm5.org/documents/intellectual%20disability%20fact%20sheet.pdf, Dec 2015).

**Mental Retardation vs Intellectual Disability:**

Currently the term mental retardation is being substituted by the term ‘intellectual disability’ in the academic forum. For the purpose of clinical services, the definition given by The American Association on Intellectual and
Developmental Disabilities (AAIDD) and Diagnostic and Statistical Manual -5 are widely used. Both AAIDD and DSM-5 have replaced the term mental retardation by Intellectual Disability.

As per the definition given in the Person with Disabilities (Protection of Rights, Equal Opportunities and Full Participation) Act 1995 of India– ‘Mental Retardation” means a condition of arrested or incomplete development of mind of a person which is specially characterized by sub-normality of intelligence’. As the law of the country accepts the term mental retardation till now, the researcher preferred the term ‘mental retardation’ instead of ‘intellectual disability’.

The children with mental retardation face many difficulties due to the arrest development of the brain. They lack in various areas, which have direct implication to their educational development. The table below will describe in brief about their potential difficulties and educational implication of these difficulties.

**Table 1.3 Potential Difficulties Faced by the Children with Mental Retardation and their Educational Implication**

<table>
<thead>
<tr>
<th>Area</th>
<th>Potential Difficulties</th>
<th>Educational Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>. Attention span (length of time on task)</td>
<td>. Split the teaching into small segments.</td>
</tr>
<tr>
<td></td>
<td>. Focus (Inhibition of distracting stimuli)</td>
<td>. Active involvement in the task.</td>
</tr>
<tr>
<td></td>
<td>. Selective attention (discrimination of important stimulus)</td>
<td>. Highlight salient cues in instruction.</td>
</tr>
<tr>
<td>Area</td>
<td>Potential Difficulties</td>
<td>Educational Implication</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td></td>
<td>characteristics)</td>
<td></td>
</tr>
</tbody>
</table>
| Metacognition | . Thinking about thinking.  
|               | . Production of strategies to assist learning.  
|               | . Organizing new information. | . Teach specific strategies (rehearsal, labelling, chunking).  
|               |                         | . Involve students in active learning process (practice, apply and review).  
|               |                         | Stress meaningful content. |
| Memory | . Short-term memory – common deficit area.  
|        | . Long-term memory – usually more similar to that of people who are not disabled (once information has been learned) | . Well planned activity with concrete and colourful materials.  
|        |                         | . Stress meaningful content.  
|        |                         | . Repetition of activity periodically. |
| Generalization Learning | . Applying knowledge of skills to new tasks, or situations.  
|                | . Using previous experience to formulate rules that will help solve problems of similar nature. | . Teach multiple contexts.  
|                |                         | Reinforce generalization.  
|                |                         | . Teach skills in relevant contexts.  
|                |                         | . Support the students to apply at various situations. |
| Motivational Considerations | . External locus of control (attributing events to others’ influence)  
|                   | . Outer directedness (in learning style)  
|                   | . Low expectation by others.  
|                   |                         | . Promote self-management.  
|                   |                         | . Teach learning strategies for academic tasks.  
|                   |                         | . Focus on leaning to learn.  
<p>|                   |                         | . Encourage problem-solving strategies. |</p>
<table>
<thead>
<tr>
<th>Area</th>
<th>Potential Difficulties</th>
<th>Educational Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>. Symbolic thought, as exemplified by introspection and developing hypotheses</td>
<td>. Provide contextual learning experiences.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>. Encourage active interaction between student and the environment.</td>
</tr>
<tr>
<td>Language Development</td>
<td>. Difficulty with receptive and expressive language.</td>
<td>. Create environment that encourages total communication.</td>
</tr>
<tr>
<td></td>
<td>Articulation of thoughts and feelings.</td>
<td>. Provide appropriate language models.</td>
</tr>
<tr>
<td></td>
<td>Possible interaction of cultural variance and language dialects</td>
<td>. Provide opportunities for students to learn language for varied purposes and with different audiences.</td>
</tr>
<tr>
<td>Academic Development</td>
<td>. Delayed acquisition of reading, writing, and mathematical skills</td>
<td>. Use learning strategies to promote effective studying.</td>
</tr>
<tr>
<td></td>
<td>. Decoding of text.</td>
<td>. Teach sight words including functional applications.</td>
</tr>
<tr>
<td></td>
<td>Reading comprehension</td>
<td>. Teach strategies for decoding unknown words.</td>
</tr>
<tr>
<td></td>
<td>Math computation</td>
<td>. Provide strategies to promote reading comprehension and math problem solving.</td>
</tr>
<tr>
<td></td>
<td>Problem-solving mathematics</td>
<td>. Develop functional writing skills.</td>
</tr>
<tr>
<td></td>
<td>Self-directed expressive writing</td>
<td>Adapt curriculum to promote</td>
</tr>
<tr>
<td>Area</td>
<td>Potential Difficulties</td>
<td>Educational Implication</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>Social- Behavioural</td>
<td>. Classroom behaviour</td>
<td>. Promote social competence through direct instruction of</td>
</tr>
<tr>
<td>Interactions</td>
<td>. Peer acceptance</td>
<td>skills.</td>
</tr>
<tr>
<td></td>
<td>Displaying emotions appropriately</td>
<td>. Reinforce appropriate behaviours.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>. Teach self-management and self-control.</td>
</tr>
<tr>
<td>Social Responding</td>
<td>. Social perception</td>
<td>. Involve peers as classroom role models.</td>
</tr>
<tr>
<td></td>
<td>Gullibility</td>
<td>. Provide a support system of peers for positive guidance</td>
</tr>
<tr>
<td></td>
<td>. Suggestibility</td>
<td>“buddy system”</td>
</tr>
<tr>
<td></td>
<td>. Acquiescence and desire to please.</td>
<td>. Teach resistance to social manipulation.</td>
</tr>
</tbody>
</table>

(Source: Adapted from Patton & Keyes. 2006; Smith, Polloway, Patton, & Beyer, 2008; Smith, Polloway, Patton, & Dowdy, 2008; and Polloway, Patton, & Nelson, 2011)

1.6. Emergence of the Study:

Teaching children with mild mental retardation in the inclusive classroom is the most challenging task. The above mentioned table (Table No. 1.3) guides our attention to take note of the following.

- **Attention:** The importance of attention is noticeable for learning. Attending stimuli is very essential for learning. For years, researchers have posited that we can attribute many of the learning problems of mental retardation to attention problem (Tomporowski & Tinsley, 1997).
Often attending to distracting things, many children with mental retardation face difficulty in learning required tasks.

- **Memory**: One of the most consistent research findings is that persons with mental retardation have difficulty remembering information. They often have particular problems with working memory i.e. ability to keep information in mind while simultaneously doing another task. (Bray, Fletcher, & Turner 1997).

- **Language Development**: Language development in mentally retarded children follow the same pattern as that of the regular children but start later, progresses at a slower rate and ends up at a lower level of development (Warner & Yonder, 1997).

- **Self-regulation**: They exhibit poor self-regulatory behaviour i.e. to employ strategies to help in a problem-solving situation. They are poor in adapting into the new situation & in solving problems arising in the day-to-day life (Bebko. & Luhaong 1998).

- **Social Development**: The persons with mental retardation lack in social skills like making and sustaining friendship and also establishing relationship with different people in various situations which contributes to some extent to their isolation (Kasari & Baumiager, 1998).

- **Academic Achievement**: Because of strong relationship between intelligence and achievement it is not surprising that students who are mentally retarded perform much below their normal peers in academic achievement. Due to inappropriate and poor stimulation, they also tend
to be underachievers in relation to expectation based on their intellectual ability.

- **Motivation:** The problems pertaining to attention, memory, language development, self – regulation, social development, and academic achievement place the children with mental retardation at risk to develop problem of motivation. If they have experienced long history of failure, they can be at risk of develop learned helplessness- the feeling that no matter how hard they try, they will still fail. The above-mentioned characteristics applicable to all types of mental retardation but degree differ.

Some research works have been carried out to improve the above mentioned factors. Children with mental retardation are given specific instructional strategies like shaping, temporary help and activities like visual stimulation, systematic auditory stimulation to increase attention. (Nizamie, et al., 2004). Some studies suggest that they can be motivated through demonstration and allowing observation of the others tasks in a breakage of time (Hallahan, et al., 2000).

Traditionally they have been educated in self-contained classrooms. Today many of them are being educated in regular classroom with the support of special educator either in the classroom or in the resource room. School programmes for the students with mild mental retardation stressed the basic academic subjects like reading, writing and arithmetic during the elementary years.
Specially teaching mathematics to the children with mild mental retardation is the most difficult task to many of the teachers. They fail to comprehend the mathematical language as they are not proficient in cognitive and meta-cognitive abilities. Various methods are used in teaching mathematics such as heuristic methods, laboratory method, lecture method, analytic-synthetic method, and inductive-deductive method. In spite of the best use of these methods the mathematics teachers often felt that children with mild mental retardation fail to acquire the mathematical concepts. So, there is a need to evolve some other teaching strategies for teaching mathematics to exceptional children in general and mental retardation in particular. Among the academics, mathematics has been considered as the challenging task for helping the children with mild mental retardation in inclusive situation. Many a times parents report that the children feel isolated in the class due to their failure in mathematics. Many professionals have made effort to ease the process of learning mathematics by applying various methods and one of those is using computer assisted instruction. Computer Assisted Instruction has helped to enhance the mathematics ability of them (Narayan, J, 1992) and there is a possibility to promote the inclusion of students with mild mental retardation by teaching mathematics though CAI.

Many experiments have been conducted to find out the efficacy of various teaching strategies. Computer Assisted Instruction is one of those. Despite some limitations, it is an effective method due to many reasons. Computers assist students and teachers in learning and instruction. Computers are versatile tools that can be used for a variety of educational purposes. They
offer several potential advantages as a medium for instruction. It is programmed
to help students learn at their own pace accommodating student differences. It helps the teachers to apply constructivist approach to classroom teaching and thus motivating students to acquire complicated skill and information in a very simple way. It permits many special need students to bypass physical or sensory limitations by providing them a multi-sensory learning experience. It is activity based in which learning takes place by active participation of the students. Through CAI, interactive learning takes place and the students can get immediate feedback.

The versatility of computer assisted instruction can be effectively used to promote inclusive education for children with deficiencies. In the era of cybernetic, the use of Computer Assisted Instruction for teaching academic skills can be very useful. Especially teaching mathematics, which required an immediate feedback, could yield better result by this method.

In the above context, the researcher has initiated to carry out a research study to find out the effectiveness of computer assisted instruction to teach mathematics to the students with mild mental retardation which may promote their inclusion in regular school.
1.7. Objectives:

1.7.1. General Objectives:

The objective of the present work is to examine whether

- Computer Assisted Instruction elicits gainful learning behaviour in the children with mild mental retardation while teaching mathematics in inclusive setting.

- Computer Assisted Instruction is helpful in promoting positive perception about inclusive education among the stakeholders

1.7.2. Specific Objectives:

1. To find out the effectiveness of CAI in teaching mathematics (counting, addition, subtraction, multiplication, division, money, and time) to the children with mild mental retardation in inclusive setting.

2. To find out the effectiveness of CAI in enhancing delayed retention.

3. To find out whether there is any change of perception of teachers about the overall learning behaviour of children with mild mental retardation with respect to attention, motivation, self-regulatory behaviour, and sociability after attending CAI.

4. To explore teachers’ perception on inclusion of students with mental retardation as a result of using CAI.

5. To explore parents’ perception on promotion of inclusive education through CAI.

6. To explore special educators’ perception on effectiveness of CAI in promoting inclusive education.
1.8. Operational Definition of the Terms Used in the Study:

Children with Mild Mental Retardation:

*In the present study, children having intelligent quotient (IQ), between 50 to 70 with +/- 5 points is designated as ‘Children with Mild Mental Retardation’.*

Intelligence Quotient:

*Indicator of intelligence which is measured with the help of Binet-Kamat Test of Intelligence.*

Social Quotient:

*Social maturity of the child to act as expected from his/her age and gender as measured by Vineland Social Maturity Scale.*

Inclusive Education:

*In the context of the present study, the inclusive education means including the children with mild mental retardation in the regular classroom setting.*

Computer Assisted Instruction (CAI):

*The Computer Assisted Instruction is a programme developed by the researcher for teaching mathematics to the children with mild mental retardation through use of computer.*
1.9 Hypotheses & Research Questions:

Hypotheses:

H1. Teaching mathematics to the children with mild mental retardation at primary level through computer assisted instruction has significant effect on learning:

1.1. Counting skill
1.2. Addition
1.3. Subtraction
1.4. Multiplication
1.5. Division
1.6. Money concept
1.7. Time concept

H2. Computer Assisted Instruction has significant impact on delayed retention.

Research Questions:

1. Whether computer assisted instruction have any impact on perception of teachers and special educators on inclusion of students with mild mental retardation in the classroom?
2. Whether computer assisted instruction have any impact on parents’ perception on inclusion of the children with mild mental retardation?

1.10. Delimitation:

To carry out a precise, objective, and academically sound study; the following areas were identified for delimitation.
- **Grade Level:** The study was conducted for the children attending at primary level from grade one through five.

- **Size of the sample:** 70 children with mild mental retardation who were attending the regular schools were identified for the study.

- **Geographical location:** The research was conducted in the primary schools of Kolkata and North 24 Paraganas Districts of West Bengal. These schools have already enrolled the children with mild mental retardation under the scheme *Sarva Shiksha Abhiyan* (Education for All).

- **Duration of Study:** The children of experimental group were taught with Computer Assisted Instruction along with traditional methods and the children of control group were taught with traditional methods by the researcher for a period of 10 months.

****